

Carbon Challenge

BALTIMORE DESIGN COMPETITION

GRAND PRIZE WINNER

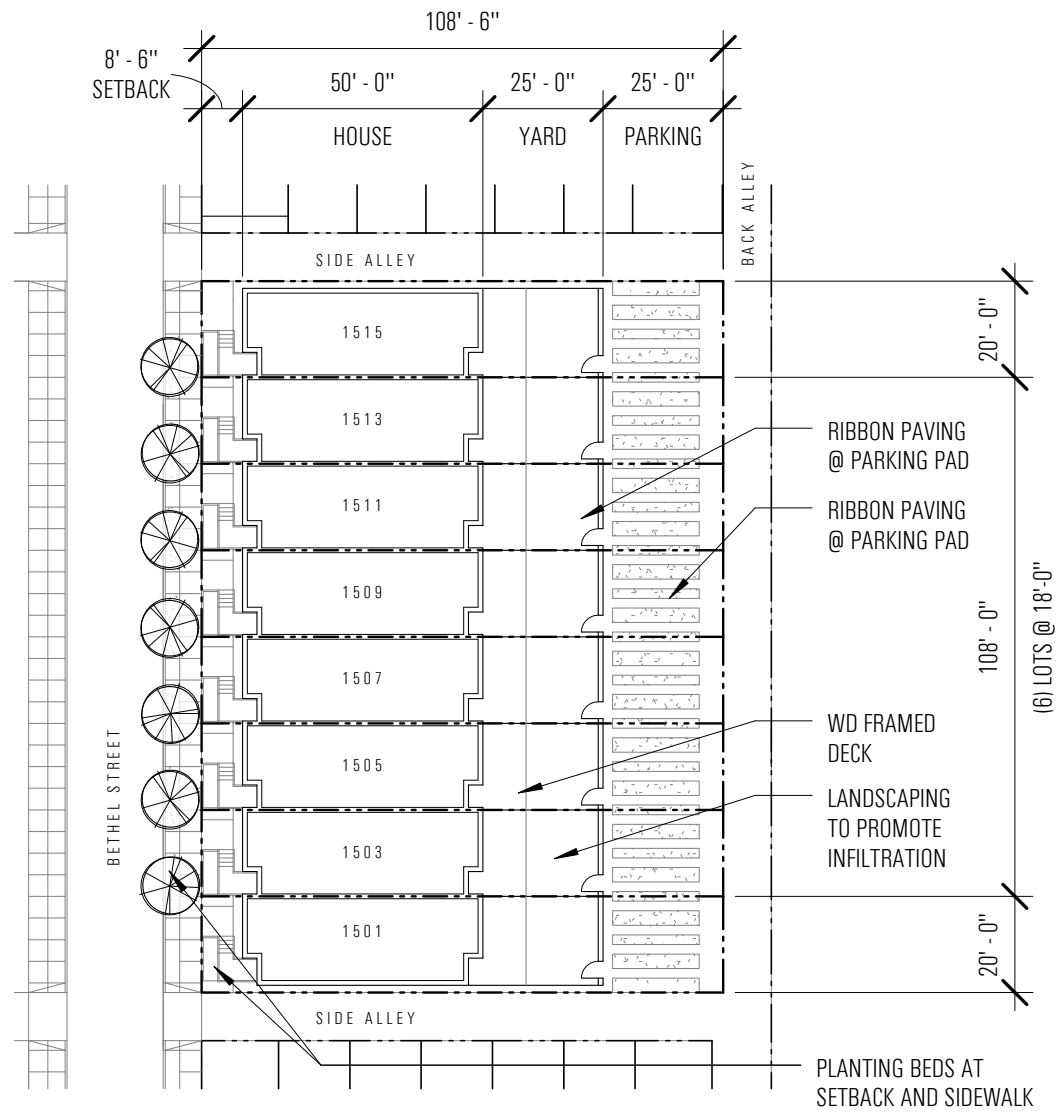


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Sponsors:





site plan

1" = 40'-0"



streetscape

VIEW NORTH ON BETHEL



location map

BALTIMORE, MARYLAND



vicinity map

OLIVER NEIGHBORHOOD



UNIT GROSS AREA		ZONING REGULATIONS		ZONE R-8 / OLIVER URP
LEVEL 1	870 SF	REQUIRED	PROVIDED	
LEVEL 2	840 SF	MIN LOT AREA:	750 SF/DU	1953 SF/DU
LEVEL 3	340 SF	MAX HEIGHT:	35'-0"	33'-6"
Grand total	2,060 SF	MAX LOT CVRG:	50%	44.5%
BEDROOMS:	3	SYSTEMS:	MULTI-ZONE DUCTLESS MINI-SPLIT HEAT PUMP HYDRONIC RADIANT FLOOR SLABS SOLAR HOT WATER + AUX ON-DEMAND	
BATHROOMS:	2 3/4	RAINWATER:	LANDSCAPING TO PROMOTE INFILTRATION 300 GAL STORAGE FOR LANDSCAPE IRRIGATION 135 SF 4" GREEN ROOF SYSTEM	
ON-SITE PARKING:	2 SPACES			

project data

1501-1515
BETHEL

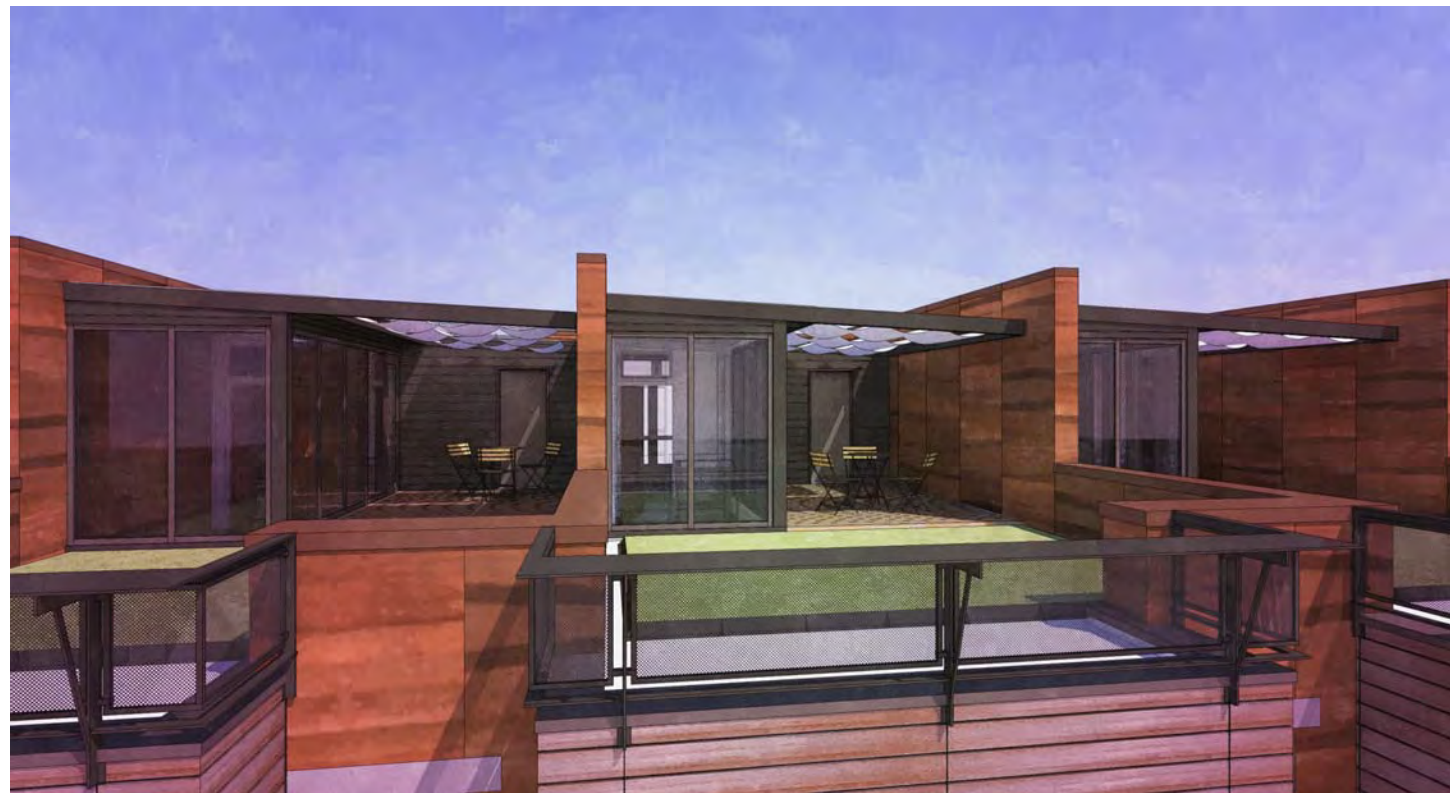
APA CARBON CHALLENGE

BALTIMORE DESIGN COMPETITION ENTRY B199



interior perspective

LIVING ROOM LOOKING EAST



exterior perspective

ROOF DECK & GARDEN ROOF



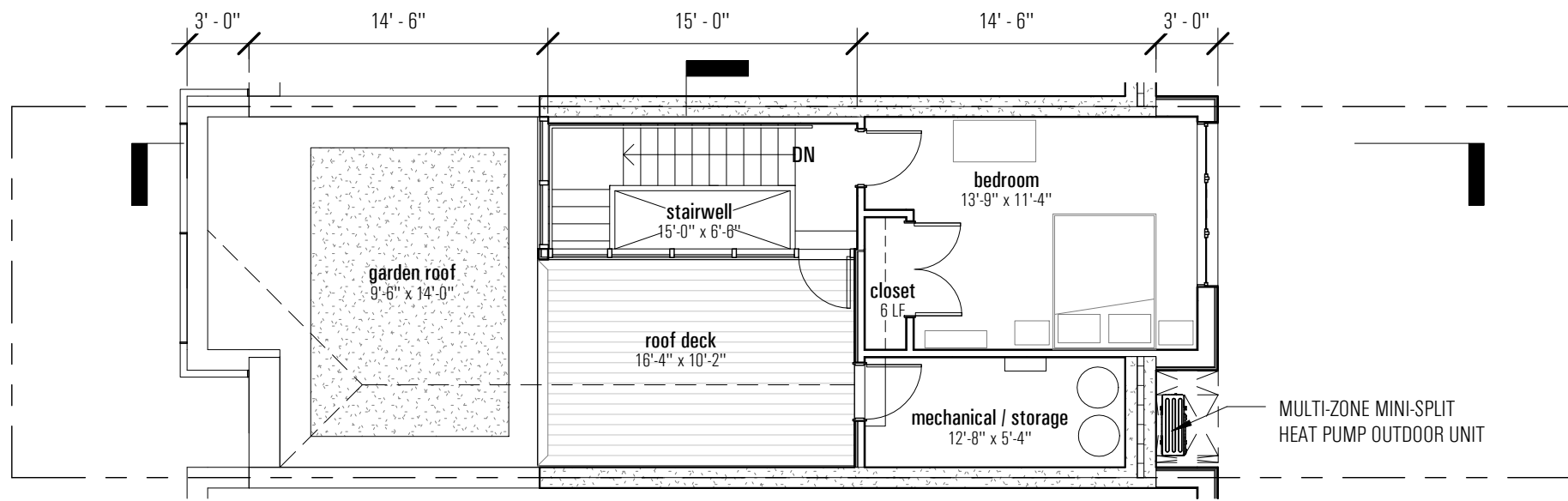
site context

VIEW SOUTH ON BETHEL FROM FEDERAL

1501-1515
BETHEL

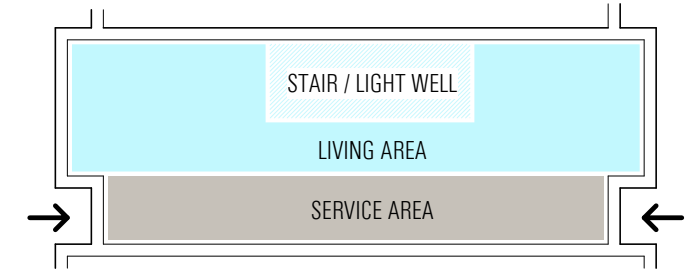
APA CARBON CHALLENGE

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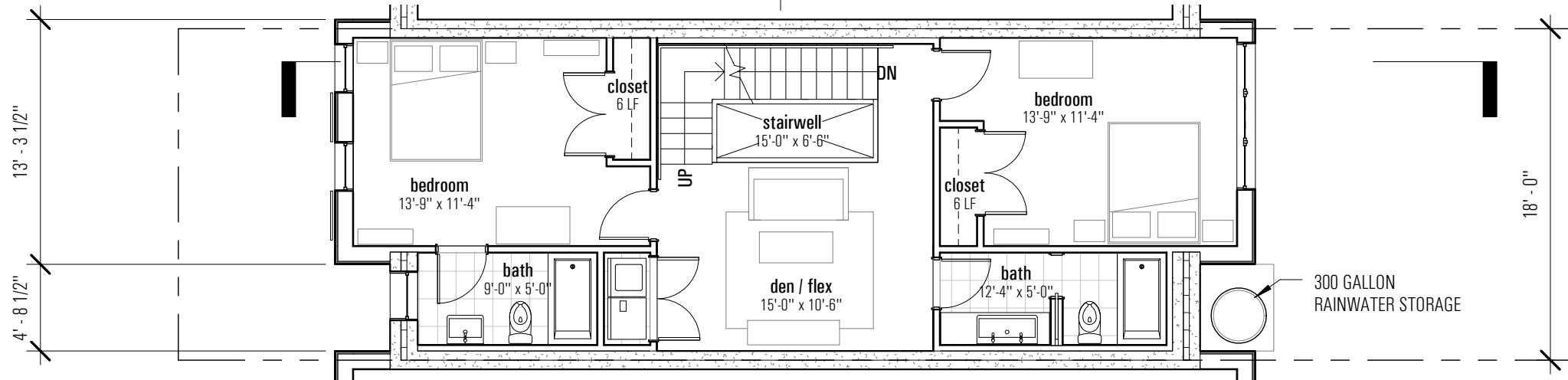


third floor

1/8" = 1'-0"

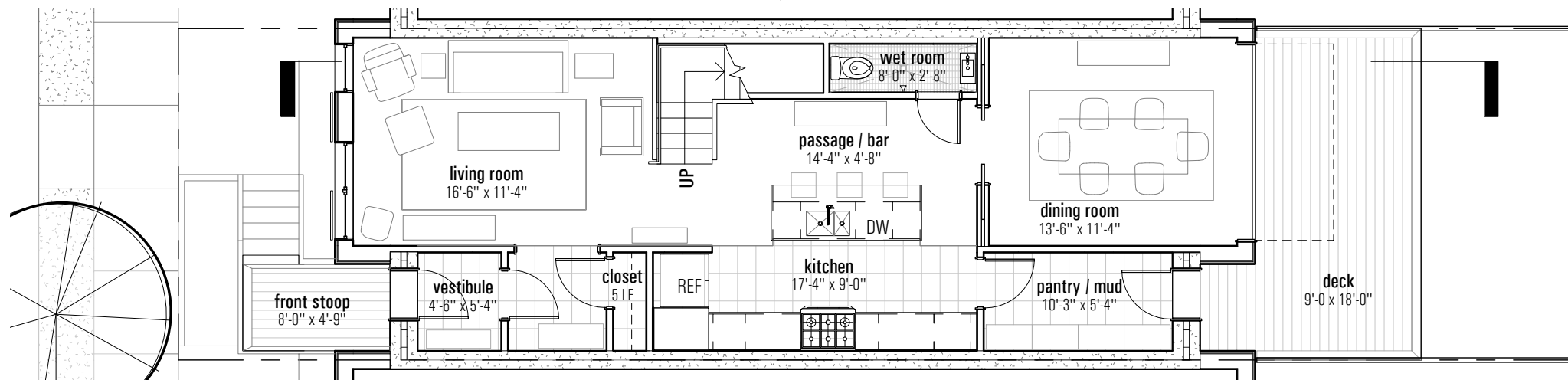


plan diagram



second floor

1/8" = 1'-0"



first floor

1/8" = 1'-0"

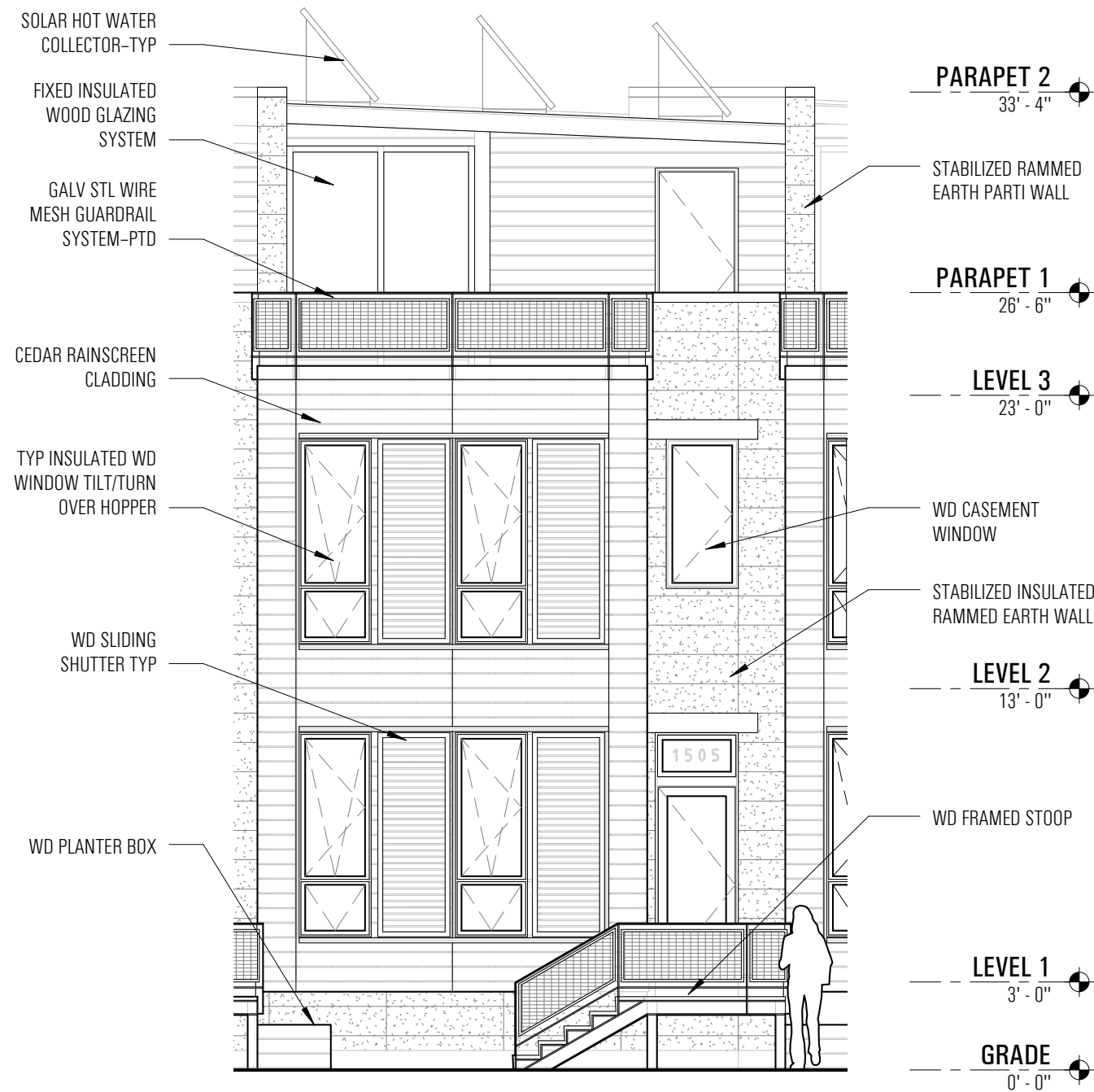
DESIGN CONSIDERATIONS FOR A ROWHOUSE FOR 3 ADULT ROOMMATES

- BEDROOMS APPROXIMATELY EQUAL IN SIZE AND DESIRABILITY
- VARIETY OF SEPARATE COMMUNAL SPACES
- CONTIGUOUS PUBLIC SPACE FOR ENTERTAINING
- OPPORTUNITIES FOR RETREAT FROM COMMUNAL LIFE
- 3 SHOWERS AVAILABLE
- ADEQUATE STORAGE
- MAXIMISE DAYLIGHTING
- ACOUSTIC SEPARATION FROM ADJOINING UNITS

1501-1515
BETHEL

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west elevation - bethel

3/16" = 1'-0"



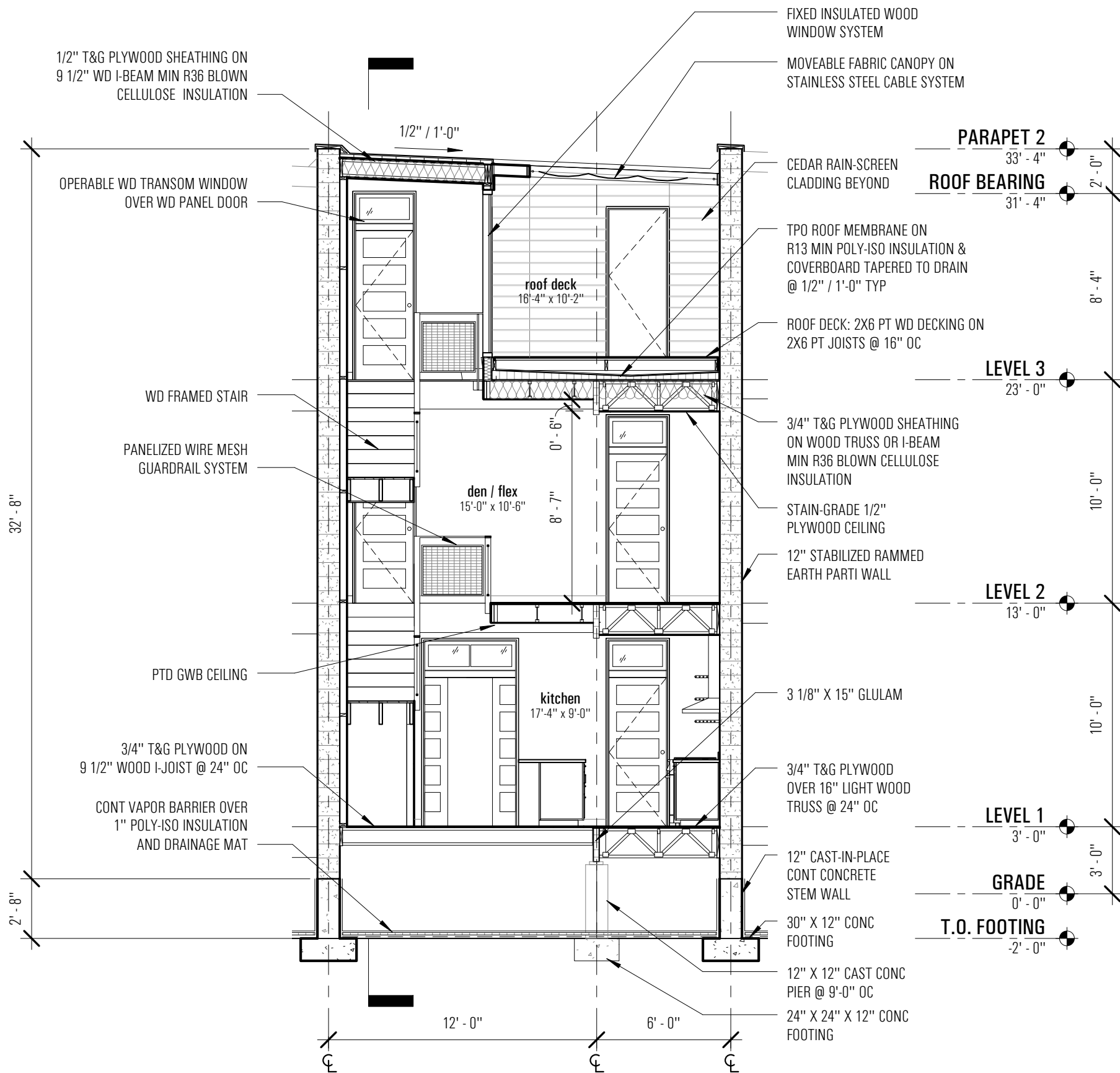
east elevation - alley

3/16" = 1'-0"

1501-1515
BETHEL

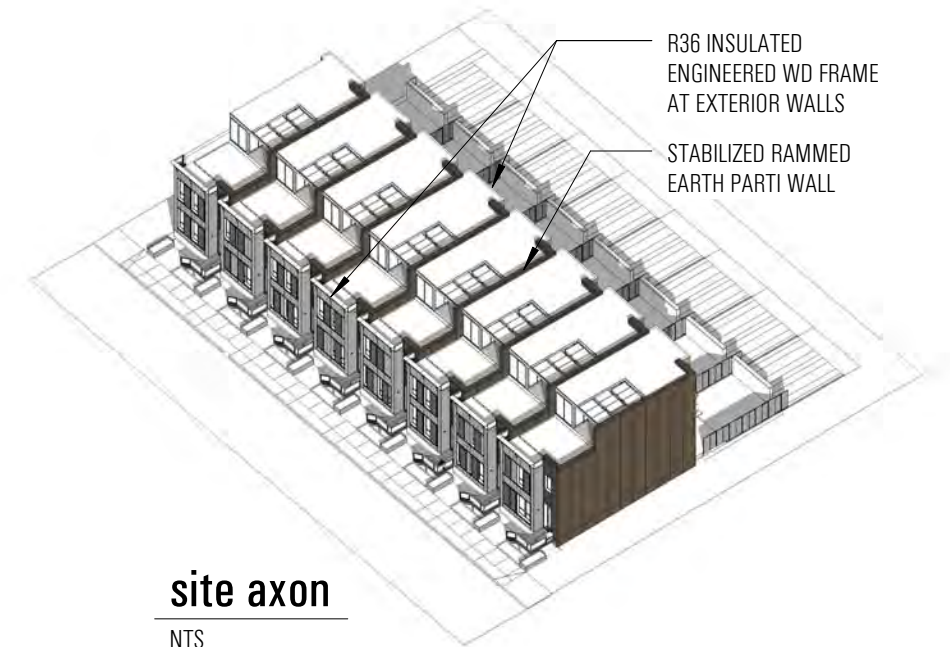
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north-south section

3/16" = 1'-0"



site axon

NTS

STABILIZED RAMMED EARTH WALL DATA

PHYSICAL PROPERTIES

THICKNESS: 12"
 STC: APPROX 60
 FIRE-RATING: APPROX 4 HRS
 TYPICAL DENSITY: 2,000 kg/m3

MATERIALS

CEMENT: 5% BY WEIGHT (3-8% TYPICAL)
 100 kg/m3
 RAMMED EARTH: 95% BY WEIGHT
 1,900 kg/m3
 REINFORCING STEEL: 30 kg/m3 (#6 BAR AT 12" OC HORIZ AND VERT)

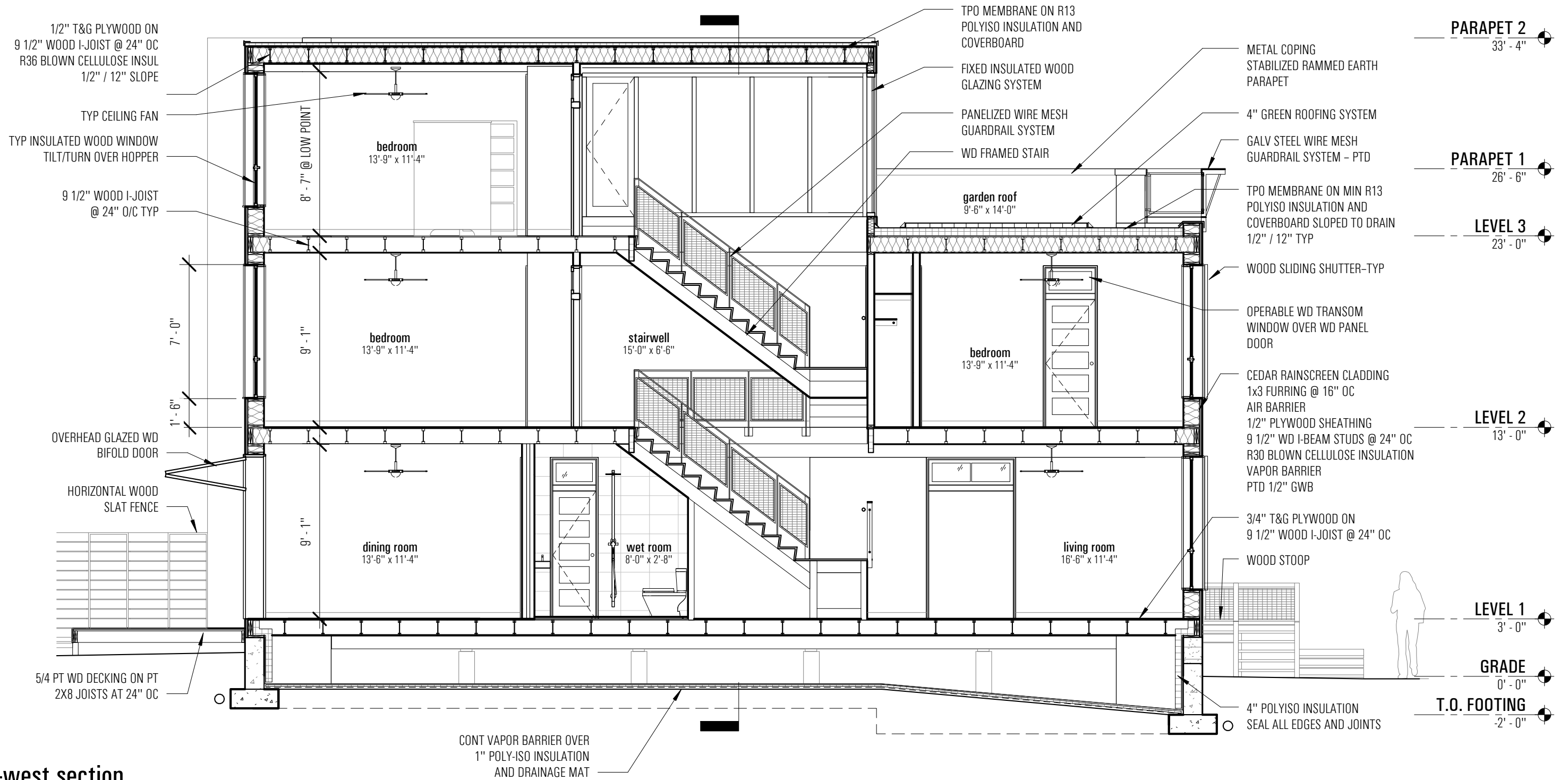
CARBON FOOTPRINT

CEMENT: .42 kg CO2/kg = 42 kg/m3 (50% FLY ASH)
 RAMMED EARTH: .023 kg CO2/kg = 43.7 kg/m3
 REINFORCING STEEL: .42 kg CO2/kg = 12.6 kg/m3 (RECYCLED)
 EST. TOTAL: 98.3 kg/m3

1501-1515
BETHEL

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east-west section

3/16" = 1'-0"

**1501-1515
BETHEL**

**IECC 2012 INSULATION REQUIREMENTS
TABLE R402.1.1 / ZONE 4**

	REQUIRED	PROVIDED
CEILINGS:	R49	R49
WOOD FRAME WALLS:	R20	R36
MASS WALLS:	R10	R36
CRAWL SPACE:	R19	R26

APA CARBON CHALLENGE
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